

Method 1613B Sample Analysis Results

Client - PACE Kansas

Client's Sample ID	SB-1 (0-2)		
Lab Sample ID	60221225001		
Filename	F160618B_05		
Injected By	BAL		
Total Amount Extracted	10.5 g	Matrix	Solid
% Moisture	16.3	Dilution	NA
Dry Weight Extracted	8.79 g	Collected	06/08/2016 08:30
ICAL ID	F160602	Received	06/10/2016 10:00
CCal Filename(s)	F160618A_10	Extracted	06/15/2016 16:45
Method Blank ID	BLANK-50705	Analyzed	06/18/2016 17:07

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	1.0	2,3,7,8-TCDF-13C	2.00	73
Total TCDF	ND	----	1.0	2,3,7,8-TCDD-13C	2.00	81
				1,2,3,7,8-PeCDF-13C	2.00	69
2,3,7,8-TCDD	ND	----	1.0	2,3,4,7,8-PeCDF-13C	2.00	67
Total TCDD	ND	----	1.0	1,2,3,7,8-PeCDD-13C	2.00	75
				1,2,3,4,7,8-HxCDF-13C	2.00	74
1,2,3,7,8-PeCDF	ND	----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	74
2,3,4,7,8-PeCDF	ND	----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	79
Total PeCDF	ND	----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	69
				1,2,3,4,7,8-HxCDD-13C	2.00	75
1,2,3,7,8-PeCDD	ND	----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	65
Total PeCDD	ND	----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	70
				1,2,3,4,7,8,9-HpCDF-13C	2.00	71
1,2,3,4,7,8-HxCDF	ND	----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	83
1,2,3,6,7,8-HxCDF	ND	----	5.0	OCDD-13C	4.00	62
2,3,4,6,7,8-HxCDF	ND	----	5.0			
1,2,3,7,8,9-HxCDF	ND	----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	5.0	2,3,7,8-TCDD-37Cl4	0.20	86
1,2,3,6,7,8-HxCDD	ND	----	5.0			
1,2,3,7,8,9-HxCDD	ND	----	5.0			
Total HxCDD	ND	----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	5.0	Equivalence: 0.011 ng/Kg		
Total HpCDF	ND	----	5.0	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	----	5.0			
Total HpCDD	ND	----	5.0			
OCDF	ND	----	10.0			
OCDD	11	----	10.0 J			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).

EMPC = Estimated Maximum Possible Concentration

RL = Reporting Limit

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

J = Estimated value

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Method 1613B Sample Analysis Results

Client - PACE Kansas

Client's Sample ID	SB-2 (0-2)		
Lab Sample ID	60221225002		
Filename	F160618B_06		
Injected By	BAL		
Total Amount Extracted	10.3 g	Matrix	Solid
% Moisture	9.6	Dilution	NA
Dry Weight Extracted	9.31 g	Collected	06/08/2016 09:45
ICAL ID	F160602	Received	06/10/2016 10:00
CCal Filename(s)	F160618A_10	Extracted	06/15/2016 16:45
Method Blank ID	BLANK-50705	Analyzed	06/18/2016 17:52

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	1.0	2,3,7,8-TCDF-13C	2.00	80
Total TCDF	ND	----	1.0	2,3,7,8-TCDD-13C	2.00	94
				1,2,3,7,8-PeCDF-13C	2.00	76
2,3,7,8-TCDD	1.3	----	1.0	2,3,4,7,8-PeCDF-13C	2.00	70
Total TCDD	1.3	----	1.0	1,2,3,7,8-PeCDD-13C	2.00	86
				1,2,3,4,7,8-HxCDF-13C	2.00	81
1,2,3,7,8-PeCDF	ND	----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	83
2,3,4,7,8-PeCDF	ND	----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	83
Total PeCDF	ND	----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	76
				1,2,3,4,7,8-HxCDD-13C	2.00	85
1,2,3,7,8-PeCDD	ND	----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	72
Total PeCDD	ND	----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	77
				1,2,3,4,7,8,9-HpCDF-13C	2.00	78
1,2,3,4,7,8-HxCDF	ND	----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	91
1,2,3,6,7,8-HxCDF	ND	----	5.0	OCDD-13C	4.00	69
2,3,4,6,7,8-HxCDF	ND	----	5.0			
1,2,3,7,8,9-HxCDF	ND	----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	5.0	2,3,7,8-TCDD-37Cl4	0.20	88
1,2,3,6,7,8-HxCDD	ND	----	5.0			
1,2,3,7,8,9-HxCDD	ND	----	5.0			
Total HxCDD	ND	----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	5.0	Equivalence: 1.3 ng/Kg		
Total HpCDF	ND	----	5.0	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	----	5.0			
Total HpCDD	ND	----	5.0			
OCDF	ND	----	10.0			
OCDD	ND	----	10.0			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).

EMPC = Estimated Maximum Possible Concentration

RL = Reporting Limit

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

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Method 1613B Sample Analysis Results

Client - PACE Kansas

Client's Sample ID	SB-3 (0-2)		
Lab Sample ID	60221225003		
Filename	F160618B_07		
Injected By	BAL		
Total Amount Extracted	10.3 g	Matrix	Solid
% Moisture	4.7	Dilution	NA
Dry Weight Extracted	9.82 g	Collected	06/08/2016 10:40
ICAL ID	F160602	Received	06/10/2016 10:00
CCal Filename(s)	F160618A_10	Extracted	06/15/2016 16:45
Method Blank ID	BLANK-50705	Analyzed	06/18/2016 18:37

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	1.0	2,3,7,8-TCDF-13C	2.00	73
Total TCDF	1.2	----	1.0	2,3,7,8-TCDD-13C	2.00	82
				1,2,3,7,8-PeCDF-13C	2.00	69
2,3,7,8-TCDD	1.3	----	1.0	2,3,4,7,8-PeCDF-13C	2.00	63
Total TCDD	1.3	----	1.0	1,2,3,7,8-PeCDD-13C	2.00	75
				1,2,3,4,7,8-HxCDF-13C	2.00	70
1,2,3,7,8-PeCDF	ND	----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	69
2,3,4,7,8-PeCDF	ND	----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	70
Total PeCDF	ND	----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	66
				1,2,3,4,7,8-HxCDD-13C	2.00	72
1,2,3,7,8-PeCDD	ND	----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	60
Total PeCDD	ND	----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	61
				1,2,3,4,7,8,9-HpCDF-13C	2.00	65
1,2,3,4,7,8-HxCDF	ND	----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	78
1,2,3,6,7,8-HxCDF	ND	----	5.0	OCDD-13C	4.00	58
2,3,4,6,7,8-HxCDF	ND	----	5.0			
1,2,3,7,8,9-HxCDF	ND	----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	5.0	2,3,7,8-TCDD-37Cl4	0.20	84
1,2,3,6,7,8-HxCDD	ND	----	5.0			
1,2,3,7,8,9-HxCDD	ND	----	5.0			
Total HxCDD	ND	----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	5.0	Equivalence: 1.3 ng/Kg		
Total HpCDF	ND	----	5.0	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	----	5.0			
Total HpCDD	ND	----	5.0			
OCDF	ND	----	10.0			
OCDD	16.0	----	10.0			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).

EMPC = Estimated Maximum Possible Concentration

RL = Reporting Limit

ND = Not Detected

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NC = Not Calculated

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Method 1613B Sample Analysis Results

Client - PACE Kansas

Client's Sample ID	SB-4 (0-2)		
Lab Sample ID	60221225004		
Filename	F160618B_08		
Injected By	BAL		
Total Amount Extracted	10.2 g	Matrix	Solid
% Moisture	9.3	Dilution	NA
Dry Weight Extracted	9.25 g	Collected	06/08/2016 11:50
ICAL ID	F160602	Received	06/10/2016 10:00
CCal Filename(s)	F160618A_10	Extracted	06/15/2016 16:45
Method Blank ID	BLANK-50705	Analyzed	06/18/2016 19:22

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	1.0	2,3,7,8-TCDF-13C	2.00	76
Total TCDF	ND	----	1.0	2,3,7,8-TCDD-13C	2.00	90
				1,2,3,7,8-PeCDF-13C	2.00	74
2,3,7,8-TCDD	ND	----	1.0	2,3,4,7,8-PeCDF-13C	2.00	70
Total TCDD	ND	----	1.0	1,2,3,7,8-PeCDD-13C	2.00	80
				1,2,3,4,7,8-HxCDF-13C	2.00	74
1,2,3,7,8-PeCDF	ND	----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	75
2,3,4,7,8-PeCDF	ND	----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	74
Total PeCDF	ND	----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	74
				1,2,3,4,7,8-HxCDD-13C	2.00	77
1,2,3,7,8-PeCDD	ND	----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	66
Total PeCDD	ND	----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	69
				1,2,3,4,7,8,9-HpCDF-13C	2.00	73
1,2,3,4,7,8-HxCDF	ND	----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	87
1,2,3,6,7,8-HxCDF	ND	----	5.0	OCDD-13C	4.00	67
2,3,4,6,7,8-HxCDF	ND	----	5.0			
1,2,3,7,8,9-HxCDF	ND	----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	5.0	2,3,7,8-TCDD-37Cl4	0.20	86
1,2,3,6,7,8-HxCDD	ND	----	5.0			
1,2,3,7,8,9-HxCDD	ND	----	5.0			
Total HxCDD	ND	----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	5.0	Equivalence: 0.010 ng/Kg		
Total HpCDF	ND	----	5.0	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	----	5.0			
Total HpCDD	ND	----	5.0			
OCDF	ND	----	10.0			
OCDD	10	----	10.0 J			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).

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Method 1613B Sample Analysis Results

Client - PACE Kansas

Client's Sample ID	SB-5 (0-2)		
Lab Sample ID	60221225005		
Filename	F160618B_09		
Injected By	BAL		
Total Amount Extracted	10.2 g	Matrix	Solid
% Moisture	4.7	Dilution	NA
Dry Weight Extracted	9.72 g	Collected	06/08/2016 14:45
ICAL ID	F160602	Received	06/10/2016 10:00
CCal Filename(s)	F160618A_10	Extracted	06/15/2016 16:45
Method Blank ID	BLANK-50705	Analyzed	06/18/2016 20:07

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	1.0	2,3,7,8-TCDF-13C	2.00	75
Total TCDF	ND	----	1.0	2,3,7,8-TCDD-13C	2.00	86
				1,2,3,7,8-PeCDF-13C	2.00	75
2,3,7,8-TCDD	1.1	----	1.0	2,3,4,7,8-PeCDF-13C	2.00	65
Total TCDD	1.1	----	1.0	1,2,3,7,8-PeCDD-13C	2.00	78
				1,2,3,4,7,8-HxCDF-13C	2.00	71
1,2,3,7,8-PeCDF	ND	----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	70
2,3,4,7,8-PeCDF	ND	----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	72
Total PeCDF	ND	----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	73
				1,2,3,4,7,8-HxCDD-13C	2.00	76
1,2,3,7,8-PeCDD	ND	----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	63
Total PeCDD	ND	----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	69
				1,2,3,4,7,8,9-HpCDF-13C	2.00	71
1,2,3,4,7,8-HxCDF	ND	----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	83
1,2,3,6,7,8-HxCDF	ND	----	5.0	OCDD-13C	4.00	63
2,3,4,6,7,8-HxCDF	ND	----	5.0			
1,2,3,7,8,9-HxCDF	ND	----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	5.0	2,3,7,8-TCDD-37Cl4	0.20	81
1,2,3,6,7,8-HxCDD	ND	----	5.0			
1,2,3,7,8,9-HxCDD	ND	----	5.0			
Total HxCDD	ND	----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	5.0	Equivalence: 1.1 ng/Kg		
Total HpCDF	ND	----	5.0	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	----	5.0			
Total HpCDD	ND	----	5.0			
OCDF	ND	----	10.0			
OCDD	ND	----	10.0			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).

EMPC = Estimated Maximum Possible Concentration

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ND = Not Detected

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Method 1613B Sample Analysis Results

Client - PACE Kansas

Client's Sample ID	SB-6 (0-2)		
Lab Sample ID	60221225006		
Filename	F160618B_10		
Injected By	BAL		
Total Amount Extracted	10.3 g	Matrix	Solid
% Moisture	7.6	Dilution	NA
Dry Weight Extracted	9.52 g	Collected	06/08/2016 15:25
ICAL ID	F160602	Received	06/10/2016 10:00
CCal Filename(s)	F160618A_10	Extracted	06/15/2016 16:45
Method Blank ID	BLANK-50705	Analyzed	06/18/2016 20:52

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	1.0	2,3,7,8-TCDF-13C	2.00	77
Total TCDF	1.2	----	1.0	2,3,7,8-TCDD-13C	2.00	89
				1,2,3,7,8-PeCDF-13C	2.00	74
2,3,7,8-TCDD	6.8	----	1.0	2,3,4,7,8-PeCDF-13C	2.00	70
Total TCDD	6.8	----	1.0	1,2,3,7,8-PeCDD-13C	2.00	84
				1,2,3,4,7,8-HxCDF-13C	2.00	76
1,2,3,7,8-PeCDF	ND	----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	73
2,3,4,7,8-PeCDF	ND	----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	81
Total PeCDF	ND	----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	72
				1,2,3,4,7,8-HxCDD-13C	2.00	82
1,2,3,7,8-PeCDD	ND	----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	68
Total PeCDD	ND	----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	73
				1,2,3,4,7,8,9-HpCDF-13C	2.00	77
1,2,3,4,7,8-HxCDF	ND	----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	89
1,2,3,6,7,8-HxCDF	ND	----	5.0	OCDD-13C	4.00	66
2,3,4,6,7,8-HxCDF	ND	----	5.0			
1,2,3,7,8,9-HxCDF	ND	----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	5.0	2,3,7,8-TCDD-37Cl4	0.20	87
1,2,3,6,7,8-HxCDD	ND	----	5.0			
1,2,3,7,8,9-HxCDD	ND	----	5.0			
Total HxCDD	ND	----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	5.0	Equivalence: 6.9 ng/Kg		
Total HpCDF	ND	----	5.0	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	6.4	----	5.0			
Total HpCDD	12.0	----	5.0			
OCDF	ND	----	10.0			
OCDD	46.0	----	10.0			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).

EMPC = Estimated Maximum Possible Concentration

RL = Reporting Limit

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

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Method 1613B Sample Analysis Results

Client - PACE Kansas

Client's Sample ID	DUP-1		
Lab Sample ID	60221225007		
Filename	F160621A_08		
Injected By	SMT		
Total Amount Extracted	10.3 g	Matrix	Solid
% Moisture	13.0	Dilution	NA
Dry Weight Extracted	8.96 g	Collected	06/08/2016 00:01
ICAL ID	F160602	Received	06/10/2016 10:00
CCal Filename(s)	F160621A_01	Extracted	06/15/2016 16:45
Method Blank ID	BLANK-50705	Analyzed	06/21/2016 15:28

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	1.0	2,3,7,8-TCDF-13C	2.00	76
Total TCDF	1.2	----	1.0	2,3,7,8-TCDD-13C	2.00	87
				1,2,3,7,8-PeCDF-13C	2.00	74
2,3,7,8-TCDD	6.1	----	1.0	2,3,4,7,8-PeCDF-13C	2.00	67
Total TCDD	6.1	----	1.0	1,2,3,7,8-PeCDD-13C	2.00	80
				1,2,3,4,7,8-HxCDF-13C	2.00	72
1,2,3,7,8-PeCDF	ND	----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	77
2,3,4,7,8-PeCDF	ND	----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	75
Total PeCDF	ND	----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	69
				1,2,3,4,7,8-HxCDD-13C	2.00	81
1,2,3,7,8-PeCDD	ND	----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	71
Total PeCDD	ND	----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	73
				1,2,3,4,7,8,9-HpCDF-13C	2.00	75
1,2,3,4,7,8-HxCDF	ND	----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	87
1,2,3,6,7,8-HxCDF	ND	----	5.0	OCDD-13C	4.00	60
2,3,4,6,7,8-HxCDF	ND	----	5.0			
1,2,3,7,8,9-HxCDF	ND	----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	5.0	2,3,7,8-TCDD-37Cl4	0.20	89
1,2,3,6,7,8-HxCDD	ND	----	5.0			
1,2,3,7,8,9-HxCDD	ND	----	5.0			
Total HxCDD	6.5	----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	5.0	Equivalence: 6.2 ng/Kg		
Total HpCDF	ND	----	5.0	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	9.3	----	5.0			
Total HpCDD	24.0	----	5.0			
OCDF	ND	----	10.0			
OCDD	68.0	----	10.0			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).

EMPC = Estimated Maximum Possible Concentration

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ND = Not Detected

NA = Not Applicable

NC = Not Calculated

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Method 1613B Sample Analysis Results

Client - PACE Kansas

Client's Sample ID	SB-7 (0-2)		
Lab Sample ID	60221225008		
Filename	F160618B_12		
Injected By	BAL		
Total Amount Extracted	10.3 g	Matrix	Solid
% Moisture	14.8	Dilution	NA
Dry Weight Extracted	8.78 g	Collected	06/09/2016 07:40
ICAL ID	F160602	Received	06/10/2016 10:00
CCal Filename(s)	F160618A_10	Extracted	06/15/2016 16:45
Method Blank ID	BLANK-50705	Analyzed	06/18/2016 22:21

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	1.0	2,3,7,8-TCDF-13C	2.00	76
Total TCDF	3.4	----	1.0	2,3,7,8-TCDD-13C	2.00	87
				1,2,3,7,8-PeCDF-13C	2.00	72
2,3,7,8-TCDD	39.0	----	1.0	2,3,4,7,8-PeCDF-13C	2.00	66
Total TCDD	40.0	----	1.0	1,2,3,7,8-PeCDD-13C	2.00	80
				1,2,3,4,7,8-HxCDF-13C	2.00	77
1,2,3,7,8-PeCDF	ND	----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	77
2,3,4,7,8-PeCDF	ND	----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	98
Total PeCDF	ND	----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	72
				1,2,3,4,7,8-HxCDD-13C	2.00	77
1,2,3,7,8-PeCDD	ND	----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	73
Total PeCDD	ND	----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	71
				1,2,3,4,7,8,9-HpCDF-13C	2.00	74
1,2,3,4,7,8-HxCDF	ND	----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	86
1,2,3,6,7,8-HxCDF	ND	----	5.0	OCDD-13C	4.00	64
2,3,4,6,7,8-HxCDF	ND	----	5.0			
1,2,3,7,8,9-HxCDF	ND	----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	5.0	2,3,7,8-TCDD-37Cl4	0.20	87
1,2,3,6,7,8-HxCDD	ND	----	5.0			
1,2,3,7,8,9-HxCDD	ND	----	5.0			
Total HxCDD	ND	----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	5.0	Equivalence: 39 ng/Kg		
Total HpCDF	ND	----	5.0	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	11.0	----	5.0			
Total HpCDD	19.0	----	5.0			
OCDF	ND	----	10.0			
OCDD	99.0	----	10.0			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).

EMPC = Estimated Maximum Possible Concentration

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NC = Not Calculated

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Method 1613B Sample Analysis Results

Client - PACE Kansas

Client's Sample ID	SB-8 (0-2)		
Lab Sample ID	60221225009		
Filename	U160619A_06		
Injected By	BAL		
Total Amount Extracted	10.2 g	Matrix	Solid
% Moisture	3.0	Dilution	NA
Dry Weight Extracted	9.89 g	Collected	06/09/2016 09:00
ICAL ID	U160204	Received	06/10/2016 10:00
CCal Filename(s)	U160618B_16	Extracted	06/15/2016 16:45
Method Blank ID	BLANK-50705	Analyzed	06/19/2016 12:17

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	1.9	----	1.0	2,3,7,8-TCDF-13C	2.00	66
Total TCDF	40.0	----	1.0	2,3,7,8-TCDD-13C	2.00	85
				1,2,3,7,8-PeCDF-13C	2.00	69
2,3,7,8-TCDD	150.0	----	1.0	2,3,4,7,8-PeCDF-13C	2.00	68
Total TCDD	160.0	----	1.0	1,2,3,7,8-PeCDD-13C	2.00	84
				1,2,3,4,7,8-HxCDF-13C	2.00	64
1,2,3,7,8-PeCDF	ND	----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	63
2,3,4,7,8-PeCDF	ND	----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	68
Total PeCDF	21.0	----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	68
				1,2,3,4,7,8-HxCDD-13C	2.00	73
1,2,3,7,8-PeCDD	ND	----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	64
Total PeCDD	ND	----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	62
				1,2,3,4,7,8,9-HpCDF-13C	2.00	71
1,2,3,4,7,8-HxCDF	ND	----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	78
1,2,3,6,7,8-HxCDF	ND	----	5.0	OCDD-13C	4.00	66
2,3,4,6,7,8-HxCDF	ND	----	5.0			
1,2,3,7,8,9-HxCDF	ND	----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	12.0	----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	5.0	2,3,7,8-TCDD-37Cl4	0.20	88
1,2,3,6,7,8-HxCDD	ND	----	5.0			
1,2,3,7,8,9-HxCDD	ND	----	5.0			
Total HxCDD	5.5	----	5.0			
1,2,3,4,6,7,8-HpCDF	15.0	----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	5.0	Equivalence: 150 ng/Kg		
Total HpCDF	56.0	----	5.0	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	87.0	----	5.0			
Total HpCDD	140.0	----	5.0			
OCDF	54.0	----	10.0			
OCDD	900.0	----	10.0			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).

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Method 1613B Sample Analysis Results

Client - PACE Kansas

Client's Sample ID	SB-9 (0-2)		
Lab Sample ID	60221225010		
Filename	U160619A_07		
Injected By	BAL		
Total Amount Extracted	10.3 g	Matrix	Solid
% Moisture	6.1	Dilution	NA
Dry Weight Extracted	9.67 g	Collected	06/09/2016 10:15
ICAL ID	U160204	Received	06/10/2016 10:00
CCal Filename(s)	U160618B_16	Extracted	06/15/2016 16:45
Method Blank ID	BLANK-50705	Analyzed	06/19/2016 13:01

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	1.0	2,3,7,8-TCDF-13C	2.00	73
Total TCDF	25.0	----	1.0	2,3,7,8-TCDD-13C	2.00	91
				1,2,3,7,8-PeCDF-13C	2.00	74
2,3,7,8-TCDD	170.0	----	1.0	2,3,4,7,8-PeCDF-13C	2.00	71
Total TCDD	180.0	----	1.0	1,2,3,7,8-PeCDD-13C	2.00	89
				1,2,3,4,7,8-HxCDF-13C	2.00	67
1,2,3,7,8-PeCDF	ND	----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	65
2,3,4,7,8-PeCDF	ND	----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	72
Total PeCDF	16.0	----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	74
				1,2,3,4,7,8-HxCDD-13C	2.00	81
1,2,3,7,8-PeCDD	ND	----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	65
Total PeCDD	ND	----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	68
				1,2,3,4,7,8,9-HpCDF-13C	2.00	75
1,2,3,4,7,8-HxCDF	ND	----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	86
1,2,3,6,7,8-HxCDF	ND	----	5.0	OCDD-13C	4.00	74
2,3,4,6,7,8-HxCDF	ND	----	5.0			
1,2,3,7,8,9-HxCDF	ND	----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	5.0	2,3,7,8-TCDD-37Cl4	0.20	92
1,2,3,6,7,8-HxCDD	ND	----	5.0			
1,2,3,7,8,9-HxCDD	ND	----	5.0			
Total HxCDD	6.3	----	5.0			
1,2,3,4,6,7,8-HpCDF	8.7	----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	5.0	Equivalence: 170 ng/Kg		
Total HpCDF	27.0	----	5.0	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	64.0	----	5.0			
Total HpCDD	100.0	----	5.0			
OCDF	25.0	----	10.0			
OCDD	560.0	----	10.0			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).

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Method 1613B Sample Analysis Results

Client - PACE Kansas

Client's Sample ID	SB-10 (0-2)		
Lab Sample ID	60221225011		
Filename	U160619A_08		
Injected By	BAL		
Total Amount Extracted	10.2 g	Matrix	Solid
% Moisture	8.7	Dilution	NA
Dry Weight Extracted	9.31 g	Collected	06/09/2016 13:00
ICAL ID	U160204	Received	06/10/2016 10:00
CCal Filename(s)	U160618B_16	Extracted	06/15/2016 16:45
Method Blank ID	BLANK-50705	Analyzed	06/19/2016 13:45

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	1.0	2,3,7,8-TCDF-13C	2.00	72
Total TCDF	9.0	----	1.0	2,3,7,8-TCDD-13C	2.00	91
				1,2,3,7,8-PeCDF-13C	2.00	75
2,3,7,8-TCDD	110.0	----	1.0	2,3,4,7,8-PeCDF-13C	2.00	69
Total TCDD	110.0	----	1.0	1,2,3,7,8-PeCDD-13C	2.00	92
				1,2,3,4,7,8-HxCDF-13C	2.00	68
1,2,3,7,8-PeCDF	ND	----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	65
2,3,4,7,8-PeCDF	ND	----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	69
Total PeCDF	ND	----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	77
				1,2,3,4,7,8-HxCDD-13C	2.00	83
1,2,3,7,8-PeCDD	ND	----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	69
Total PeCDD	ND	----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	73
				1,2,3,4,7,8,9-HpCDF-13C	2.00	85
1,2,3,4,7,8-HxCDF	ND	----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	92
1,2,3,6,7,8-HxCDF	ND	----	5.0	OCDD-13C	4.00	81
2,3,4,6,7,8-HxCDF	ND	----	5.0			
1,2,3,7,8,9-HxCDF	ND	----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	5.0	2,3,7,8-TCDD-37Cl4	0.20	90
1,2,3,6,7,8-HxCDD	ND	----	5.0			
1,2,3,7,8,9-HxCDD	ND	----	5.0			
Total HxCDD	ND	----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	5.0	Equivalence: 110 ng/Kg		
Total HpCDF	ND	----	5.0	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	19.0	----	5.0			
Total HpCDD	34.0	----	5.0			
OCDF	ND	----	10.0			
OCDD	140.0	----	10.0			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).

EMPC = Estimated Maximum Possible Concentration

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Method 1613B Sample Analysis Results

Client - PACE Kansas

Client's Sample ID	SB-11 (0-2)		
Lab Sample ID	60221225012		
Filename	U160619A_09		
Injected By	BAL		
Total Amount Extracted	10.5 g	Matrix	Solid
% Moisture	15.9	Dilution	NA
Dry Weight Extracted	8.83 g	Collected	06/09/2016 13:50
ICAL ID	U160204	Received	06/10/2016 10:00
CCal Filename(s)	U160618B_16	Extracted	06/15/2016 16:45
Method Blank ID	BLANK-50705	Analyzed	06/19/2016 14:30

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	5.7	----	1.0	2,3,7,8-TCDF-13C	2.00	69
Total TCDF	71.0	----	1.0	2,3,7,8-TCDD-13C	2.00	88
				1,2,3,7,8-PeCDF-13C	2.00	70
2,3,7,8-TCDD	1500.0	----	1.0 E	2,3,4,7,8-PeCDF-13C	2.00	66
Total TCDD	1600.0	----	1.0 E	1,2,3,7,8-PeCDD-13C	2.00	87
				1,2,3,4,7,8-HxCDF-13C	2.00	66
1,2,3,7,8-PeCDF	ND	----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	63
2,3,4,7,8-PeCDF	ND	----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	68
Total PeCDF	43.0	----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	74
				1,2,3,4,7,8-HxCDD-13C	2.00	79
1,2,3,7,8-PeCDD	ND	----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	64
Total PeCDD	9.4	----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	69
				1,2,3,4,7,8,9-HpCDF-13C	2.00	80
1,2,3,4,7,8-HxCDF	ND	----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	87
1,2,3,6,7,8-HxCDF	ND	----	5.0	OCDD-13C	4.00	75
2,3,4,6,7,8-HxCDF	ND	----	5.0			
1,2,3,7,8,9-HxCDF	ND	----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	5.0	2,3,7,8-TCDD-37Cl4	0.20	120
1,2,3,6,7,8-HxCDD	ND	----	5.0			
1,2,3,7,8,9-HxCDD	ND	----	5.0			
Total HxCDD	20.0	----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	5.0	Equivalence: 1500 ng/Kg		
Total HpCDF	11.0	----	5.0	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	46.0	----	5.0			
Total HpCDD	77.0	----	5.0			
OCDF	15.0	----	10.0			
OCDD	380.0	----	10.0			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).

EMPC = Estimated Maximum Possible Concentration

RL = Reporting Limit

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

E = Exceeds calibration range

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Method 1613B Sample Analysis Results

Client - PACE Kansas

Client's Sample ID	SB-12 (0-2)		
Lab Sample ID	60221225013		
Filename	U160619A_10		
Injected By	BAL		
Total Amount Extracted	10.2 g	Matrix	Solid
% Moisture	5.8	Dilution	NA
Dry Weight Extracted	9.61 g	Collected	06/09/2016 15:10
ICAL ID	U160204	Received	06/10/2016 10:00
CCal Filename(s)	U160618B_16	Extracted	06/15/2016 16:45
Method Blank ID	BLANK-50705	Analyzed	06/19/2016 15:14

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	1.1	----	1.0	2,3,7,8-TCDF-13C	2.00	71
Total TCDF	44.0	----	1.0	2,3,7,8-TCDD-13C	2.00	89
				1,2,3,7,8-PeCDF-13C	2.00	74
2,3,7,8-TCDD	240.0	----	1.0	2,3,4,7,8-PeCDF-13C	2.00	68
Total TCDD	260.0	----	1.0	1,2,3,7,8-PeCDD-13C	2.00	88
				1,2,3,4,7,8-HxCDF-13C	2.00	67
1,2,3,7,8-PeCDF	ND	----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	64
2,3,4,7,8-PeCDF	ND	----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	68
Total PeCDF	22.0	----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	75
				1,2,3,4,7,8-HxCDD-13C	2.00	81
1,2,3,7,8-PeCDD	ND	----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	68
Total PeCDD	ND	----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	71
				1,2,3,4,7,8,9-HpCDF-13C	2.00	81
1,2,3,4,7,8-HxCDF	ND	----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	89
1,2,3,6,7,8-HxCDF	ND	----	5.0	OCDD-13C	4.00	77
2,3,4,6,7,8-HxCDF	ND	----	5.0			
1,2,3,7,8,9-HxCDF	ND	----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	5.0	2,3,7,8-TCDD-37Cl4	0.20	92
1,2,3,6,7,8-HxCDD	ND	----	5.0			
1,2,3,7,8,9-HxCDD	ND	----	5.0			
Total HxCDD	9.8	----	5.0			
1,2,3,4,6,7,8-HpCDF	7.7	----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	5.0	Equivalence: 240 ng/Kg		
Total HpCDF	7.7	----	5.0	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	39.0	----	5.0			
Total HpCDD	65.0	----	5.0			
OCDF	14.0	----	10.0			
OCDD	210.0	----	10.0			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).

EMPC = Estimated Maximum Possible Concentration

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ND = Not Detected

NA = Not Applicable

NC = Not Calculated

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Method 1613B Sample Analysis Results

Client - PACE Kansas

Client's Sample ID	SB-13 (0-2)		
Lab Sample ID	60221225014		
Filename	U160619A_11		
Injected By	BAL		
Total Amount Extracted	10.2 g	Matrix	Solid
% Moisture	3.8	Dilution	NA
Dry Weight Extracted	9.81 g	Collected	06/09/2016 16:15
ICAL ID	U160204	Received	06/10/2016 10:00
CCal Filename(s)	U160618B_16	Extracted	06/15/2016 16:45
Method Blank ID	BLANK-50705	Analyzed	06/19/2016 15:59

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	2.1	----	1.0	2,3,7,8-TCDF-13C	2.00	71
Total TCDF	58.0	----	1.0	2,3,7,8-TCDD-13C	2.00	89
				1,2,3,7,8-PeCDF-13C	2.00	73
2,3,7,8-TCDD	490.0	----	1.0 E	2,3,4,7,8-PeCDF-13C	2.00	67
Total TCDD	520.0	----	1.0 E	1,2,3,7,8-PeCDD-13C	2.00	86
				1,2,3,4,7,8-HxCDF-13C	2.00	70
1,2,3,7,8-PeCDF	ND	----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	65
2,3,4,7,8-PeCDF	ND	----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	70
Total PeCDF	23.0	----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	75
				1,2,3,4,7,8-HxCDD-13C	2.00	84
1,2,3,7,8-PeCDD	ND	----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	66
Total PeCDD	ND	----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	71
				1,2,3,4,7,8,9-HpCDF-13C	2.00	79
1,2,3,4,7,8-HxCDF	ND	----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	89
1,2,3,6,7,8-HxCDF	ND	----	5.0	OCDD-13C	4.00	76
2,3,4,6,7,8-HxCDF	ND	----	5.0			
1,2,3,7,8,9-HxCDF	ND	----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	6.0	----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	5.0	2,3,7,8-TCDD-37Cl4	0.20	95
1,2,3,6,7,8-HxCDD	ND	----	5.0			
1,2,3,7,8,9-HxCDD	ND	----	5.0			
Total HxCDD	20.0	----	5.0			
1,2,3,4,6,7,8-HpCDF	12.0	----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	5.0	Equivalence: 500 ng/Kg		
Total HpCDF	33.0	----	5.0	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	87.0	----	5.0			
Total HpCDD	150.0	----	5.0			
OCDF	23.0	----	10.0			
OCDD	650.0	----	10.0			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).

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NC = Not Calculated

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Method 1613B Blank Analysis Results

Lab Sample ID	BLANK-50705	Matrix	Solid
Filename	U160618A_12	Dilution	NA
Total Amount Extracted	10.0 g	Extracted	06/15/2016 16:45
ICAL ID	U160204	Analyzed	06/18/2016 12:48
CCal Filename(s)	U160617A_18	Injected By	BAL

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	1.0	2,3,7,8-TCDF-13C	2.00	71
Total TCDF	ND	----	1.0	2,3,7,8-TCDD-13C	2.00	89
				1,2,3,7,8-PeCDF-13C	2.00	74
2,3,7,8-TCDD	ND	----	1.0	2,3,4,7,8-PeCDF-13C	2.00	68
Total TCDD	ND	----	1.0	1,2,3,7,8-PeCDD-13C	2.00	91
				1,2,3,4,7,8-HxCDF-13C	2.00	69
1,2,3,7,8-PeCDF	ND	----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	64
2,3,4,7,8-PeCDF	ND	----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	65
Total PeCDF	ND	----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	71
				1,2,3,4,7,8-HxCDD-13C	2.00	81
1,2,3,7,8-PeCDD	ND	----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	63
Total PeCDD	ND	----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	65
				1,2,3,4,7,8,9-HpCDF-13C	2.00	73
1,2,3,4,7,8-HxCDF	ND	----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	77
1,2,3,6,7,8-HxCDF	ND	----	5.0	OCDD-13C	4.00	67
2,3,4,6,7,8-HxCDF	ND	----	5.0			
1,2,3,7,8,9-HxCDF	ND	----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	5.0	2,3,7,8-TCDD-37Cl4	0.20	78
1,2,3,6,7,8-HxCDD	ND	----	5.0			
1,2,3,7,8,9-HxCDD	ND	----	5.0			
Total HxCDD	ND	----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	----	5.0	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	----	5.0			
Total HpCDD	ND	----	5.0			
OCDF	ND	----	10.0			
OCDD	ND	----	10.0			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).

EMPC = Estimated Maximum Possible Concentration

RL = Reporting Limit

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Method 1613B Laboratory Control Spike Results

Lab Sample ID	LCS-50706	Matrix	Solid
Filename	F160619B_16	Dilution	NA
Total Amount Extracted	10.0 g	Extracted	06/15/2016 16:45
ICAL ID	F160602	Analyzed	06/20/2016 01:25
CCal Filename	F160619B_01	Injected By	BAL
Method Blank ID	BLANK-50705		

Compound	Cs	Cr	Lower Limit	Upper Limit	% Rec.
2,3,7,8-TCDF	10	11	7.5	15.8	107
2,3,7,8-TCDD	10	8.9	6.7	15.8	89
1,2,3,7,8-PeCDF	50	46	40.0	67.0	92
2,3,4,7,8-PeCDF	50	56	34.0	80.0	113
1,2,3,7,8-PeCDD	50	46	35.0	71.0	92
1,2,3,4,7,8-HxCDF	50	56	36.0	67.0	112
1,2,3,6,7,8-HxCDF	50	50	42.0	65.0	100
2,3,4,6,7,8-HxCDF	50	48	35.0	78.0	97
1,2,3,7,8,9-HxCDF	50	50	39.0	65.0	99
1,2,3,4,7,8-HxCDD	50	55	35.0	82.0	111
1,2,3,6,7,8-HxCDD	50	57	38.0	67.0	113
1,2,3,7,8,9-HxCDD	50	58	32.0	81.0	116
1,2,3,4,6,7,8-HpCDF	50	51	41.0	61.0	102
1,2,3,4,7,8,9-HpCDF	50	49	39.0	69.0	97
1,2,3,4,6,7,8-HpCDD	50	50	35.0	70.0	100
OCDF	100	100	63.0	170.0	101
OCDD	100	110	78.0	144.0	110
2,3,7,8-TCDD-37Cl4	10	9.0	3.1	19.1	90
2,3,7,8-TCDF-13C	100	78	22.0	152.0	78
2,3,7,8-TCDD-13C	100	88	20.0	175.0	88
1,2,3,7,8-PeCDF-13C	100	78	21.0	192.0	78
2,3,4,7,8-PeCDF-13C	100	72	13.0	328.0	72
1,2,3,7,8-PeCDD-13C	100	86	21.0	227.0	86
1,2,3,4,7,8-HxCDF-13C	100	73	19.0	202.0	73
1,2,3,6,7,8-HxCDF-13C	100	75	21.0	159.0	75
2,3,4,6,7,8-HxCDF-13C	100	79	22.0	176.0	79
1,2,3,7,8,9-HxCDF-13C	100	75	17.0	205.0	75
1,2,3,4,7,8-HxCDD-13C	100	74	21.0	193.0	74
1,2,3,6,7,8-HxCDD-13C	100	69	25.0	163.0	69
1,2,3,4,6,7,8-HpCDF-13C	100	74	21.0	158.0	74
1,2,3,4,7,8,9-HpCDF-13C	100	74	20.0	186.0	74
1,2,3,4,6,7,8-HpCDD-13C	100	82	26.0	166.0	82
OCDD-13C	200	120	26.0	397.0	60

Cs = Concentration Spiked (ng/mL)
 Cr = Concentration Recovered (ng/mL)
 Rec. = Recovery (Expressed as Percent)
 Control Limit Reference: Method 1613, Table 6, 10/94 Revision
 R = Recovery outside of control limits
 Nn = Value obtained from additional analysis
 * = See Discussion

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Method 1613B Spiked Sample Report

Client - PACE Kansas

Client's Sample ID	SB-7 (0-2)-MS		
Lab Sample ID	60221225008-MS		
Filename	F160618B_13	Matrix	Solid
Total Amount Extracted	10.3 g	Dilution	NA
ICAL ID	F160602	Extracted	06/15/2016 16:45
CCal Filename(s)	F160618A_10	Analyzed	06/18/2016 23:06
Method Blank ID	BLANK-50705	Injected By	BAL

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.22	108	2,3,7,8-TCDF-13C	2.00	74
Total TCDF				2,3,7,8-TCDD-13C	2.00	87
				1,2,3,7,8-PeCDF-13C	2.00	73
2,3,7,8-TCDD	0.20	0.49	245	2,3,4,7,8-PeCDF-13C	2.00	71
Total TCDD				1,2,3,7,8-PeCDD-13C	2.00	79
				1,2,3,4,7,8-HxCDF-13C	2.00	78
1,2,3,7,8-PeCDF	1.00	0.98	98	1,2,3,6,7,8-HxCDF-13C	2.00	76
2,3,4,7,8-PeCDF	1.00	1.09	109	2,3,4,6,7,8-HxCDF-13C	2.00	90
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.00	72
				1,2,3,4,7,8-HxCDD-13C	2.00	73
1,2,3,7,8-PeCDD	1.00	0.99	99	1,2,3,6,7,8-HxCDD-13C	2.00	69
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.00	69
				1,2,3,4,7,8,9-HpCDF-13C	2.00	72
1,2,3,4,7,8-HxCDF	1.00	1.10	110	1,2,3,4,6,7,8-HpCDD-13C	2.00	85
1,2,3,6,7,8-HxCDF	1.00	1.02	102	OCDD-13C	4.00	66
2,3,4,6,7,8-HxCDF	1.00	0.90	90			
1,2,3,7,8,9-HxCDF	1.00	1.06	106	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	1.14	114	2,3,7,8-TCDD-37Cl4	0.20	85
1,2,3,6,7,8-HxCDD	1.00	1.17	117			
1,2,3,7,8,9-HxCDD	1.00	1.14	114			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.00	1.07	107			
1,2,3,4,7,8,9-HpCDF	1.00	1.01	101			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.00	1.05	105			
Total HpCDD						
OCDF	2.00	2.00	100			
OCDD	2.00	3.08	154			

Qs = Quantity Spiked Qm = Quantity Measured Rec. = Recovery (Expressed as Percent)

Results reported on a total weight basis and are valid to no more than 2 significant figures.

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Method 1613B Spiked Sample Report

Client - PACE Kansas

Client's Sample ID	SB-7 (0-2)-MSD	Matrix	Solid
Lab Sample ID	60221225008-MSD	Dilution	NA
Filename	F160618B_14	Extracted	06/15/2016 16:45
Total Amount Extracted	10.3 g	Analyzed	06/18/2016 23:51
ICAL ID	F160602	Injected By	BAL
CCal Filename(s)	F160618A_10		
Method Blank ID	BLANK-50705		

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.22	109	2,3,7,8-TCDF-13C	2.00	78
Total TCDF				2,3,7,8-TCDD-13C	2.00	91
				1,2,3,7,8-PeCDF-13C	2.00	75
2,3,7,8-TCDD	0.20	0.46	230	2,3,4,7,8-PeCDF-13C	2.00	72
Total TCDD				1,2,3,7,8-PeCDD-13C	2.00	81
				1,2,3,4,7,8-HxCDF-13C	2.00	78
1,2,3,7,8-PeCDF	1.00	0.98	98	1,2,3,6,7,8-HxCDF-13C	2.00	78
2,3,4,7,8-PeCDF	1.00	1.09	109	2,3,4,6,7,8-HxCDF-13C	2.00	93
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.00	77
				1,2,3,4,7,8-HxCDD-13C	2.00	77
1,2,3,7,8-PeCDD	1.00	0.91	91	1,2,3,6,7,8-HxCDD-13C	2.00	72
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.00	71
				1,2,3,4,7,8,9-HpCDF-13C	2.00	76
1,2,3,4,7,8-HxCDF	1.00	1.15	115	1,2,3,4,6,7,8-HpCDD-13C	2.00	88
1,2,3,6,7,8-HxCDF	1.00	1.01	101	OCDD-13C	4.00	66
2,3,4,6,7,8-HxCDF	1.00	0.88	88			
1,2,3,7,8,9-HxCDF	1.00	1.03	103	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	1.13	113	2,3,7,8-TCDD-37Cl4	0.20	90
1,2,3,6,7,8-HxCDD	1.00	1.19	119			
1,2,3,7,8,9-HxCDD	1.00	1.15	115			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.00	1.07	107			
1,2,3,4,7,8,9-HpCDF	1.00	0.98	98			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.00	1.06	106			
Total HpCDD						
OCDF	2.00	2.17	108			
OCDD	2.00	2.96	148			

Qs = Quantity Spiked

Qm = Quantity Measured

Rec. = Recovery (Expressed as Percent)

Results reported on a total weight basis and are valid to no more than 2 significant figures.

REPORT OF LABORATORY ANALYSIS

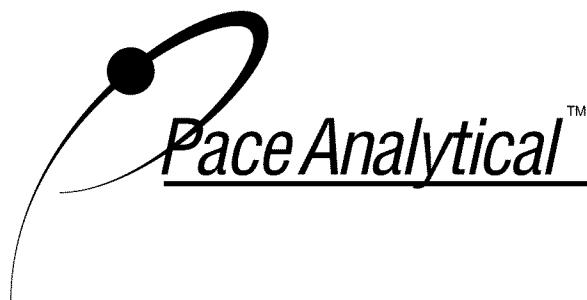
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Method 1613 Spike Sample Results

Client - PACE Kansas

Client Sample ID SB-7 (0-2)
Lab Sample ID 60221225008
MS ID 60221225008-MS
MSD ID 60221225008-MSD

Sample Filename F160618B_12
MS Filename F160618B_13
MSD Filename F160618B_14

Dry Weights
Sample Amount 8.78 g
MS Amount 8.8 g
MSD Amount 8.8 g

Analyte	Sample Conc. ng/Kg	MS/MSD Qs (ng)	MS Qm (ng)	MSD Qm (ng)	RPD	Background Subtracted		
						MS % Rec.	MSD % Rec.	RPD
2,3,7,8-TCDF	0.000	0.20	0.22	0.22	0.2	108	109	0.2
2,3,7,8-TCDD	38.630	0.20	0.49	0.46	6.0	75	61	20.8
1,2,3,7,8-PeCDF	0.000	1.00	0.98	0.98	0.0	98	98	0.0
2,3,4,7,8-PeCDF	0.000	1.00	1.09	1.09	0.5	109	108	0.5
1,2,3,7,8-PeCDD	0.000	1.00	0.99	0.91	8.0	99	91	8.0
1,2,3,4,7,8-HxCDF	0.000	1.00	1.10	1.15	4.7	109	114	4.7
1,2,3,6,7,8-HxCDF	0.000	1.00	1.02	1.01	1.2	102	101	1.2
2,3,4,6,7,8-HxCDF	0.000	1.00	0.90	0.88	2.4	90	88	2.4
1,2,3,7,8,9-HxCDF	0.000	1.00	1.06	1.03	3.5	106	103	3.5
1,2,3,4,7,8-HxCDD	0.000	1.00	1.14	1.13	1.4	114	113	1.4
1,2,3,6,7,8-HxCDD	0.000	1.00	1.17	1.19	1.7	117	119	1.7
1,2,3,7,8,9-HxCDD	0.000	1.00	1.14	1.15	0.9	114	115	0.9
1,2,3,4,6,7,8-HpCDF	0.000	1.00	1.07	1.07	0.8	105	104	0.8
1,2,3,4,7,8,9-HpCDF	0.000	1.00	1.01	0.98	2.1	100	98	2.1
1,2,3,4,6,7,8-HpCDD	10.640	1.00	1.05	1.06	0.9	96	97	1.0
OCDF	0.000	2.00	2.00	2.17	8.1	97	106	8.3
OCDD	98.729	2.00	3.08	2.96	4.0	111	105	5.6

Definitions

MS = Matrix Spike
MSD = Matrix Spike Duplicate
Qm = Quantity Measured
Qs = Quantity Spiked
% Rec. = Percent Recovery
RPD = Relative Percent Difference
NA = Not Applicable
NC = Not Calculated

CDD = Chlorinated dibenzo-p-dioxin
CDF = Chlorinated dibenzo-p-furan
T = Tetra
Pe = Penta
Hx = Hexa
Hp = Hepta
O = Octa